

## Chapter 2 Environmental Requirements

### 2-1. General

The planning, design, construction, and operation of pumping stations should be accomplished with full consideration for the project's environmental requirements. Many of these requirements are dictated by Federal or state statutes, by local sponsor's desires, or by USACE policy. In any case, studies of pumping station features should be undertaken to identify potential impacts and to define environmental objectives and constraints.

### 2-2. Environmental Impacts

Pumping stations affect the hydrology and water quality of both the receiving and supplying water bodies. The changed hydrologic and water quality conditions often affect other environmental parameters. The following list contains some of the potential adverse environmental impacts of a pumping station feature:

- a.* Reduced dissolved oxygen.
- b.* Increased temperature.
- c.* Increased turbidity and suspended solids.
- d.* Lost habitat (riparian and aquatic).
- e.* Change in hydrology and hydraulics.
- f.* Noise generated by prime mover (diesel versus electric).

- g.* Aesthetics.
- h.* Waste fuel oil and lubricating oil and greases.

### 2-3. Environmental Objectives

A pumping station can and should have negligible adverse environmental impacts. Through proper planning, design, construction, and operation, many of the adverse impacts listed above can be avoided or minimized. Remaining impacts should be mitigated and environmental enhancement addressed. The following steps should be taken to better ensure satisfactory compliance with the environmental objectives of pumping station projects:

- a.* Identify all environmental objectives and constraints, including statutory and policy requirements and sponsor's desires.
- b.* Identify all potential environmental impacts, both adverse and beneficial.
- c.* Incorporate design, construction, or operation features that avoid or minimize adverse impacts.
- d.* Quantify unavoidable adverse impacts and incorporate appropriate mitigative features.
- e.* Incorporate environmental enhancement features as required to address the sponsor's desires (sponsor funded).